EE 125 Project Proposal

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For our final project, we intend to utilize the DE0-CV development board and the onboard VGA display to create an implementation of the game Snake in VHDL. The game is to be played on a standard computer or television monitor with a VGA interface and the pushbutton switches on the development board. The game display will consist of some number of rows and columns in a rectangular grid on the screen. The screen background will be black, with a green snake and red apples. When the game starts, a snake comprising a body of three circles and a head, moving upward, will be presented to the player. Two pushbuttons on the board allow the player to steer the head of the snake, turning left or right. Each segment of the body of the snake follows the head. A third pushbutton allows the user to reset the game. The objective of the game is to increase the size of the snake by moving the snake over an apple positioned at a random square in the grid. Consuming an apple increases the length of the snake from the tail end by one, and a new apple will randomly appear. Should the snake run into the edge of the grid or into itself, the player dies, whereupon a results screen is presented to the player indicating the final size of the snake or the number of apples consumed.